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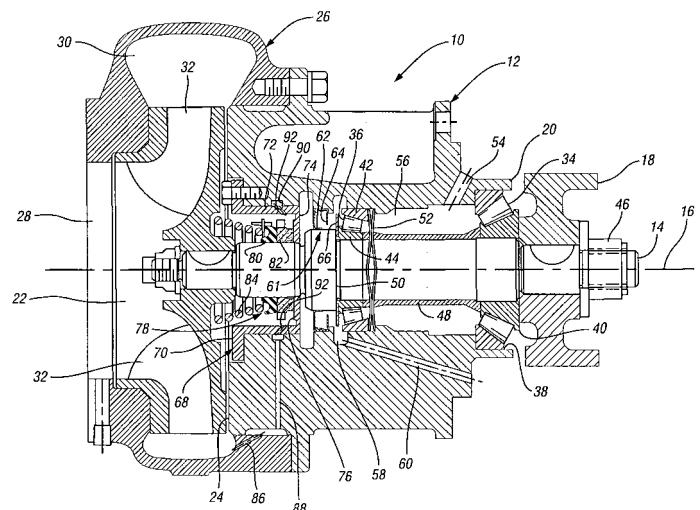
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(54) Engine water pump with improved water seal

(57) An improved diesel engine water pump includes three main features that aid in extending the maintenance-free life of the pump. The impeller shaft is carried by tapered roller shaft support bearings of which the impeller bearing has a floating outer race that is urged axially by a preload spring to provide a prescribed axial preload that maintains concentricity of the shaft with the

axis and prolongs bearing life. An improved oil seal combines an oil slinger, a stationary deflector and a lip oil seal with a return passage to the engine to more effectively limit oil leakage from the pump. An improved water seal includes pressurized water jets fed from the pump volute that flush wear particles from the water seal surface and increase water seal life. Further details of these features are also disclosed.



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EUROPEAN SEARCH REPORT

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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 29 March 2007	Examiner Ingelbrecht, Peter
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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